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THE UNIVERSITY OF ALBERTA

PSYCHOLOGICAL RIGIDITY AND ITS RELATIONSHIP TO MORAL REASONING

by

© GAIL ELIZABETH ROSS

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

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ABSTRACT

This investigation was concerned with deriving a better understanding of the relationship of psychological rigidity to moral reasoning.

In order to determine a general factor of psychological rigidity, each S was administered two tests of rigidity; the Barron Complexity Scale which measures personality rigidity; and the Einstellung Water Jar Test which measures problem-solving rigidity. Stages of moral reasoning were determined by the administration of Form A of Kohlberg's Moral Dilemmas. The design allowed examination of possible sex differences and variations associated with socio-economic status.

The sample consisted of forty-five young adults enrolled in an Introductory Educational Psychology course at the University of Alberta.

Results of the investigation revealed that the majority of S's (75%) functioned at Level II (Conventional), Stages 3 and 4. There were, however, two S's who responded at Level I (Preconventional) and nine S's who responded at Level III (Postconventional).

Rigidity scores were then inspected and cut-off scores for extreme groups, on both measures, were ascertained. Results indicated that psychological rigidity, as defined by both scales, was positively related to moral reasoning. Higher stage reasons displayed less psychological rigidity than their lower stage counterparts.

Two additional factors often associated with changes in moral reasoning, sex and socio-economic status, were investigated. The results suggested that flexibility of cognitive structures, as measured by high scores on both the Barron Complexity Scale and the Einstellung Water Jar Test, have a positive relationship with the higher stages of moral reasoning, irrespective of sex or socio-economic status.

It was concluded, therefore, that there is some evidence that cognitive flexibility (as opposed to rigidity) has a positive relationship to the acquired level of moral reasoning, irrespective of sex or socio-economic status. Further, there is some evidence that both 'personality-rigidity' and 'problem-solving rigidity' measure one "generalized" rigidity factor.

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CHAPTER I

INTRODUCTION

Within the past decade the topic of morality and its function in our culture has been highly emphasized. Although our school systems aim at producing morally mature and mentally healthy individuals, the general population varies with respect to moral attitudes, beliefs and subsequent moral reasoning. Whatever the issue of morality is judged to be (promotion of harmonious social relations, fostering of personal maturity, etc.) it may be restricted by the individual's difficulty in acquiring new habits or response sets that conflict with old well-established habits or mental sets. This difficulty often correlates with rigidity of thought (narrow mindedness) placing restrictions on the individual's perception of his environment and on the use he can make of that environment. However, the degree of restriction may vary from individual to individual depending on how the particular situation is construed and "upon attitudes the individual adopts...which reflect the parameters which characterize him as a person (Thurstone, 1944).

Thus, the current study stems from the author's interest in rigidity-flexibility as a dimension which effects the individual's moral reasoning ability.

As a young child, the individual is influenced by parental views on morality and is taught to adhere to them accordingly. He accepts parental decree as absolute as he has no view of his own and knows of no other conflicting authority. Through maturation, increased socialization, and use of past experiences, the individual develops an

increasing ability to perceive social reality, or to organize and integrate his social experience into universal moral principles.

However, the inability to use these past experiences in problem situations, or to change one's mental set with the demands of the situation may be dependent upon a generalized factor (Luchins, 1949) of intellectual functioning; that of rigidity-flexibility. If the acquisition of universal moral principles requires the ability to problem-solve in conflict situations (Kohlberg, 1975), it would seemingly follow that the individual would have to possess a fairly flexible cognitive structure in order to analyze the possible alternatives.

> The conditions which enhance moral flexibility in a child, also propel him toward the moral autonomy it requires (Kohlberg, 1975, p. 119).

More recently, Cowen and Thompson (1951) have found the inability to problem-solve in conflict situations to be a general factor in personality and organization of thought. Based upon an assumed relation between certain Rorschach responses, the personality factors which appear to be related to this problem-solving rigidity (as opposed to flexibility) include: limited productivity and imaginativeness, the inability to perceive complex relationships and to integrate constructively; an inability and a hesitancy to enter psychologically new situations; restricted range of interests; and a poor adjustment to society. If, the progressive movement toward basing moral judgment on higher levels of justice involves the ability to react to others as someone like the self and to react to the self's behavior in the role of others (Kohlberg, 1963), it is questionable whether an

individual possessing the above mentioned restricting personality factors will advance to the more autonomous levels of moral reasoning. Cognitive rigidity as effected by the various rigid personality variables would seemingly impede such a progressive movement.

It is of interest whether students who have recently broken the strings of home to enter university and are, therefore, faced with the necessity of social interaction, the need for personal development, and the importance of practicing responsibility to, and cooperation with others, will show evidence of mature problem-solving abilities. Several questions can, and will be, asked.

1. At what level are young adults functioning in the area of problem-solving in moral situations? Stages of moral development postulated by Kohlberg will be specifically referred to.
2. Do these young adults reflect a characteristic degree of personality rigidity? Degrees of rigidity postulated by Barron will be specifically referred to.
3. Do these young adults reflect a characteristic level of problem-solving rigidity? Degrees of problem-solving rigidity postulated by Luchins will be specifically referred to.
4. Is there a significant relationship between personality rigidity and problem-solving rigidity? Do both tests measure one "generalized" rigidity factor?
5. Is personality and/or problem-solving rigidity a factor in moral development? If so, does it impede, or enhance

progress toward moral autonomy?

DEFINITIONS

For the purpose of this study, the following definitions have been adopted:

Morality: represents a set of rational principles of judgment and decision, which are valid for every culture -- the principles of human welfare and justice (Kohlberg, 1976).

Moral Judgment: represents the individual's ideas and attitudes concerning rules, justice, and ethical behavior. It represents "the individual's estimates of the morality of a given act in terms of some personal standards of good and evil by which human behavior is judged" (Kohlberg, 1976, p. 287).

Personality Rigidity: refers to the relationship between an individual's personality development and the degree of rigidity found in his attitudes and displayed behavior.

Problem-Solving Rigidity: refers to the tendency to adhere to a problem solution which had previously given results, when there are more direct and efficient means of problem solving.

CHAPTER II

REVIEW OF THE LITERATURE

Start (1961) proposed that the basis of any morality is a system of rules of conduct which defines "a network of reciprocal rights and obligations and which prohibits at least gross acts of maleviolence". Similarly, Piaget (1965) suggested that morality exists in a system of rules and the respect which the individual acquires for these rules. Thus, morality, a contributory factor to successful socialization, may be generally defined as a type of conscience acquired through a set of cultural rules of social action which have been internalized by the individual.

One of modern psychology's first attempts at the investigation of the acquisition and internalization of the existing rules of one's social milieu was conducted by Freud (1908), in which he attributed moral functioning to the development of the superego, whose task it is to judge and scrutinize the individual's actions. This development involves parental identification, resulting in the internalization of the parents' moral codes and the gradual acceptance of these codes as one's own. Deviation from these internalized rules causes discomfort in the form of anxiety and guilt. Guilt occurs when the moral codes, developed through identification with parental quthority, are not upheld; a conflict inspired by a desire to be like the parents. Behavior of an antisocial nature during adolescence, or adulthood, might then be attributed to a lack of superego development during childhood, resulting in insufficient anxiety or

guilt, and thereby no production of discomfort upon deviation from parental moral codes.

More recently, it has been suggested (Gilligan, 1965, 1976) that this psychoanalytical theory of the affective sources of morality is incomplete as it ignores the precursor of guilt - the affect of shame. Although a number of psychoanalysts since Freud have concerned themselves with the concepts of shame, guilt and/or morality, not one has explicitly attempted to integrate the concepts of shame and guilt into a psychoanalytical theory of moral experience. Gilligan sees moral beliefs and value judgments as the "cognitive counterparts of the painful effects that underlie all morality and all neuroses, namely, shame and guilt" (Gilligan, 1976, p. 145). That is, moral judgments are motivated by shame and guilt which, in turn, reinforce these feelings. Hence, deviation from one's internalized rules produces shame which results in mental discomfort in the form of anxiety and guilt.

An alternate view of the development of morality has been offered by Social Learning theorists (Bandura & Walter, 1963; Bandura, 1971) who explain this internalization of social rules in terms of the acquisition of behavior or response dispositions. Through principles of reinforcement, vicarious or direct, a series of desirable habits are conditioned and the responses to these habits become generalized to situations resembling the original ones under which they were learned. It follows however, that when the rewards are discontinued, the socialized responses tend to drop out of the child's 'repertoir of behavior'. From this perspective, behavior of an

antisocial nature during adolescence, or adulthood, may then be attributed to the absence of sufficient reinforcement and/or modeling cues during childhood. However, it is hard to make distinctions between moral development and the broader area of social development and socialization.

The past decade, having witnessed a great deal of research on moral development (Kohlberg, 1968, 1969, 1974, 1975, 1976; Rest, 1969, 1973; Turiel, 1967, 1969, 1972), concerned itself with the internal aspects of socialization rather than, as stated by McDougall (1908): "Morality is the key to understanding social development". There has been a continued awareness of the distinction between internal moral development, outward socialization, and social judgment, such that three different aspects of internalization have been stressed: the behavioral, the emotional, and the cognitive judgmental aspects of moral action.

The latter mentioned aspect (cognitive judgmental) has been elaborated on by Piaget (1932, 1948, 1950), who focused on the cognitive processes underlying moral responses and theorized that the organization of these processes is different at different stages of development. Kohlberg (1958) furthered Piaget's early studies in suggesting that there was a large rational component in moral behavior: his conclusion being that there was a 'natural' developmental pattern to moral judgment. This cognitive-developmental approach evaluates morality through the individual's rationalization and justification of moral action in moral dilemma situations (Kohlberg, 1963). Further discussion of the cognitive-developmental approach will

appear elsewhere in this thesis.

With regard to the above mentioned internalized principles, (rationalization) the current study stems from the author's consideration of how the individual adjusts to, and justifies moral action. The degree of a person's rigidity of personality appears to play an important part in his process of rationalization, and subsequent adjustment.

In this fast changing age of technology, rigidity becomes an area of utmost interest and concern. The individual's chance of meeting the ensuing demand for change and frequent readjustment is dependent upon his ability to acquire new information and learning by accepting and rejecting principles according to his own internal code, rather than succumbing to the standards of his social and political milieu. Perhaps Fromm (1941) expressed the existence of some inherent regulatory force as rigidity when he stated that:

> Although there is no fixed human nature, we cannot regard human nature as being infinitely malleable and able to adapt itself to any kinds of conditions without developing a psychological dynamism of its own (p. 14-15).

Fromm's suggestion that human nature has certain inherent mechanisms, some sectors more flexible and adaptable than others, leads the author to question whether one of these sectors could be, or at least be associated with, the realm of moral reasoning.

As Miller and Good (1960) so aptly describe; a human's individuality, born out of the genes of his family, cannot help but create problems for human societies. For, unlike the fixed reflexes accompanying the complex societies of the insect community, the human

being must adjust to a structured society. At birth, the cortical cells of the brain are uncommitted to rigid patterns, yet our society is structured and therefore may demand a certain rigidity, on the part of the individual, to adjust to it. If so, we would be obliged to consider that he develops, rather than inherits, this form of rigidity.

On this basis, the purpose of the present study is to investigate whether the development of rigidity is related to the development of moral reasoning. More specifically, it is the author's intention to examine whether individuals possessing a low degree of rigid personality characteristics exhibit more autonomous moral reasoning than do individuals who possess a high degree of rigid personality characteristics.

MORAL DEVELOPMENT

Although Piaget is better known for his work in the area of logico-mathematical concepts, his first attempts at uncovering cognitive thinking processes focused on moral judgment in children. As this research has since been expanded by Kohlberg (1963, 1969, etc., etc., etc.), and Turiel (1966, 1969, 1972), it appears beneficial, in studying moral development, to briefly recapitulate their contributions.

Piaget:

Piaget's classic study (1932), The Moral Judgment of the Child, suggested that the development of moral judgment is akin to that of cognitive development, as moral schemata are based on the child's cognitive structure. Further, morality resides in a system of rules which

evolve and diversify as maturation progresses. The development of these moral rules is dependent on such cognitive skills as reality perception, experiential organization and evaluation, discrimination and generalization, and, in later adolescence, the ability to reason abstractly. Hence, the processes underlying moral judgment are self-constructed from the child's attempt to organize the world around him (Tracy, 1971).

Through extensive interviews and observations of children, Piaget postulated a 2-stage invariant sequence of moral development; with each stage representing a qualitatively different mode of thought. These levels, or stages, may co-exist at the same age and even in the same child, but the second stage gradually succeeds in dominating the first. This 2-stage sequence involves a basic shift in moral reasoning ability: First, when the child progresses from preoperational to operational thought at approximately seven years of age (morality of constraint), and later at twelve years of age, when the child advances to formal thought processes (morality of co-operation). Blind, unquestioning following of the rules imposed by an authority figure characterizes the morality of constraint, whereas, following the rules due to a conscious knowledge of the need for co-operation and the reasons behind the rules characterizes the morality of co-operation.

The cognitive limitations of the preoperational stage, realism and egocentrism, cause the child to view rules as external absolutes and thereby instigate the formation of unilateral respect, leading to an heteronomous attitude toward adult rules as sacred. The child's moral concepts have developed from his parents' teachings of what is

right and what is wrong; he has not yet acquired the intellectual structure to consider other alternatives nor the emotional capacity to empathize with others. In short, it is solely the overt consequences which count in assessing the wrongfulness of acts and not the inner intentions and motivations involved (Flavell, 1963).

Piaget believes that through intellectual growth in the experiences of role-taking within the peer group, the perception of roles shifts from external authoritarian commands to internalized principles (Kohlberg, 1964). The child becomes increasingly able to distinguish between the public world of objects and the private world of thoughts and feelings. This emerging state of autonomous justice morality, to replace the earlier heteronomous morality, develops through the child's increased capacity to decenter, and to reflect a subjective rather than an objective morality. With this orientation, wrongful conduct is judged by both motivation and objective criteria. Justice, having now been placed in a social context, is seen in terms of equality and equity (Flavell, 1963). Therefore, through greater social interaction, the child is able to differentiate his own perspectives from those of others (mutual respect) and hence is forced to move from an egocentric to a sociocentric orientation toward reality (Sigel, 1969).

This progression from egocentric to sociocentric modes of thinking proceed along two different paths; substitution and integration. However, in the realm of social and psychological ideas such as morality, ideas are found to evolve by substitution (qualitative) rather than by integration (quantitative). Through the process of substitution, the replacement of a less mature idea with a more mature idea,

the child begins to take the viewpoint of others into consideration and is more concerned with the motivation or intention of the behavior rather than the amount of physical damage caused by the act. To demonstrate how children acquire such conceptions of moral judgment, Piaget presented children, of different age levels, with a pair of stories involving the telling of lies. The results indicated that the younger children (ages 5-7) judged the stories on the basis of their deviance from the truth, while the older children (ages 8-10) emphasized the intentions involved (Piaget, 1960). This suggests that the latter group is beginning to understand reciprocal relationships as contrasted to the younger children who are primarily concerned with moral wrongness as defined by sanctions. Thus, in the growth of moral concepts, judgment of blame, made independent of sanctions and based on the intentions of the wrongdoer is substituted for the earlier judgment based solely upon qualitative considerations (Elkind, 1974). Thus, whether ideas emerge by substitution or integration, their direction is always toward ever greater objectivity, reciprocity and relativity.

This morality of co-operation, expected to develop in all children unless fixated by parental demands or by deprivation of peer experiences, is a direct function of age, irregardless of the child's nationality, social class or religion. While specific cultural ideologies do not appear necessary for the formation of the child's moral ideology, they do appear to stimulate or retard age trends of development without actually being responsible for these age shifts (Johnson, 1962).

Kohlberg:

Inspired by Piaget's pioneering effort to apply a structural approach to moral development, Kohlberg (1958, 1963, 1969) incorporated and expanded this cognitive developmental approach through longitudinal, cross cultural, social class, and educational research; thereby defining three aspects of morals thus: behavioral aspect, reflected in a person's ability to resist temptation; reactions of individuals to their own behavior, specific to their transgression of moral rules; and, the individual's estimates of the morality of a given act in terms of some personal standards of good and evil by which human behavior is judged (Kohlberg, 1976, p. 287). His concern revolving around the latter aspect of the above mentioned, is related more to the structure behind the content of moral responses rather than the content itself. On this basis, Kohlberg (1958) developed an interview containing stories posing a philosophical conflict between morally unacceptable (or acceptable) alternatives. The following story illustrates one of Kohlberg's moral dilemmas:

> In Europe a woman was near death from a special kind of cancer. There was one drug that the doctors thought might save her - a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what it cost him to make it. He paid $200 for the radium and charged $2,000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only round up about $1,000 which was only half of the cost. He told the druggist that his wife was dying and asked him to sell it cheaper, or let him pay later. But the druggist said: "No, I discovered the drug and I am going to make money from it". So Heinz got desperate and broke into the man's store to steal the drug. Should the husband have done that?

The subject's choice (steal, or not steal) is referred to as the content of his moral judgment, while the structure of his moral judgment is defined by the reasoning behind this choice.

Through such stories and extensive case analysis, Kohlberg (1968) developed a six-stage cognitive-developmental typology in which the classification of responses is based not on the adolescent's behavior, or decided course of action, but on the moral reasoning that leads to the proposed answer. The stage, or structure, of an individual's moral judgment defines: 1. his value of various moral issues (eg. life, liberty); and 2. why he finds them valuable (Kohlberg, 1976). These six qualitatively different modes of thought in the moralization process represent a progressive movement toward basing moral judgment on personally accepted internal principles of justice, equality, and respect for human life (Kohlberg, 1964, 1966). "Each new stage is a differentiation and integration of a set of functional contents present at the prior state" (Kohlberg and Kramer, 1969, p. 99).

The following is a brief review of Kohlberg's developmental sequence.

1. Preconventional Level: The individual is responsive to cultural rules as good or bad in terms of physical results from action, or by physical power from those in authority, rather than in terms of persons or standards.

   a. Stage 1: Punishment and Obedience Orientation: The physical results of behavior determine the goodness or badness regardless of the value of these consequences. Example: "Obey rules to avoid punishment" (Kohlberg, 1968, p. 28).

   b. Stage 2: The Instrumental Relativist Orientation: Right action consists of that which satisfies one's own needs, and occasionally, the needs of others. Example: "You scratch my back and I'll scratch yours" (Kohlberg, 1975, p. 671).

II. Conventional Level: Moral value resides in the performance of good or right roles and in the maintenance of the conventional order and the expectancies of others, regardless of immediate or obvious results.

a. Stage 3: The Interpersonal Concordance or 'Good Boy - Nice Girl' Orientation: Stereotypical or majority behavior is the correct behavior - one that pleases others.
Example: "Conform to avoid disapproval, dislike by others" (Kohlberg, 1968, p. 28).

b. Stage 4: The Law and Order Orientation: Unquestioning regard for authority, fixed rules and the maintenance of the social order defines right behavior.
Example: "One earns respect by performing dutifully" (Kohlberg, 1971, p. 1067).

III. Postconventional Level: Moral value resides in conformity, by the self, to shared or shareable standards, rights or duties.

a. Stage 5: The Social-Contract Legalistic Theory Orientation: Right action is defined in terms of general individual rights which have been examined and are relative to society as a whole.
Example: "Conform to maintain the respect of the impartial spectator judging in terms of human welfare" (Kohlberg, 1968, p. 28).

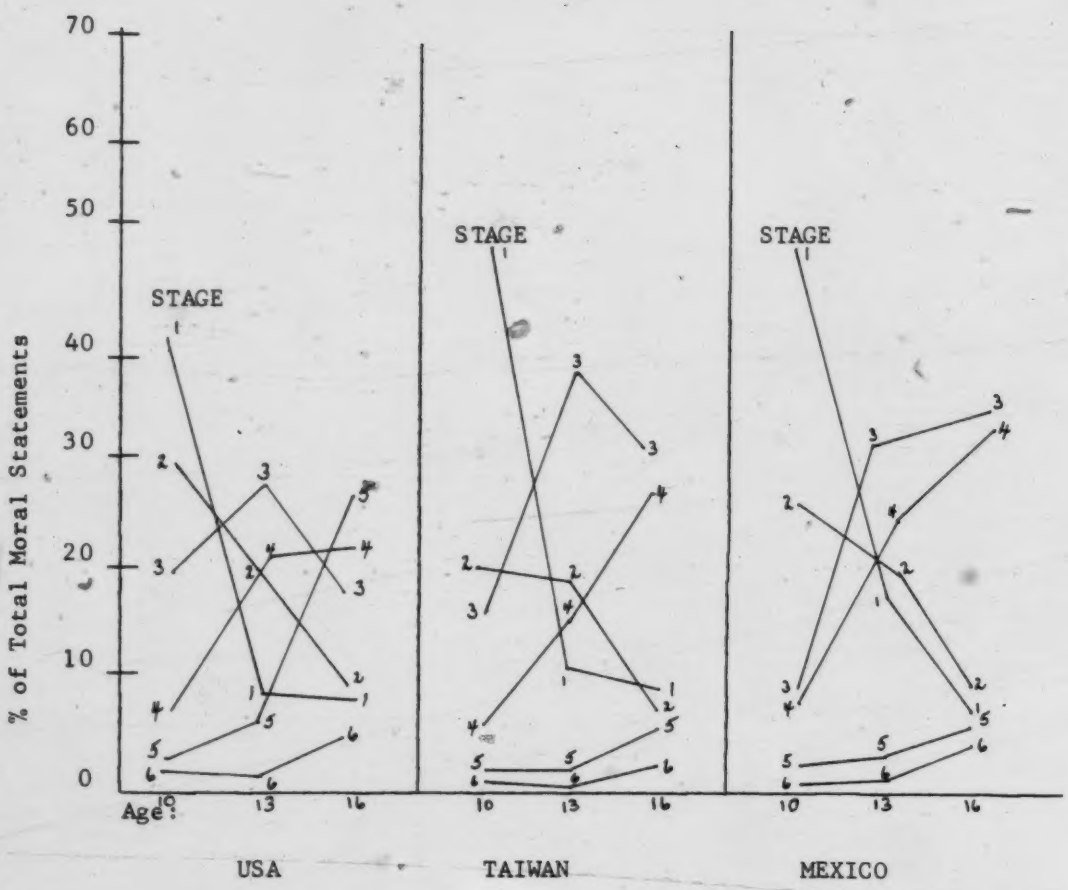
b. Stage 6: The Universal Ethical Principle Orientation: Right is defined by the decision of the conscience in accord with self-chosen ethical principles appealing to logical comprehensiveness, universality, and consistency. These abstract principles include justice, reciprocity and equality of human rights, and respect for the dignity of human beings as individuals.
Example: "Conform to avoid self-condemnation" (Kohlberg, 1973, p. 299).

These moral stages represent qualitatively different modes of thought through which the individual must pass in the prescribed sequence. Kohlberg views the series of stages as forming an invariant sequence in which the attainment of a stage is dependent on the attainment of the preceeding stages. Further, while cultural factors may speed up, slow down or stop development at any

stage, they do not change the sequence. This sequentiality across cultures, with studies conducted in the United States, Taiwan, Great Britain, Mexico and Canada, consistently supports Kohlberg's (1968) claim of cultural universality. In all societies studied, Stages 1 and 2 declined sharply as a function of age while the thinking representative of Stages 3 and 4 increased with middle adolescence (or late adolescence in primitive societies) and then began to level off. Moral judgments representative of Stages 5 and 6 were found to increase very slowly, yet steadily, in all societies. However, more advanced forms of moral judgment appeared later in more primitive societies. Thus, Kohlberg maintains that while the specific content of moral decisions is influenced by prevalent cultural patterns of living, the underlying principles of justice reflected in Stages 5 and 6 are free from culturally defined content. A profile depicting the percentage of response across the six stages, at three different ages, and within three separate cultures is presented in Figure 1.

Figure 1

Age Trends in Middle Class Urban Boys in the US, Taiwan, and Mexico (Kohlberg, 1970a)



While this evidence supports the validity of the stages as forming a fixed developmental sequence, it further implies that moral development "is not merely a matter of learning the verbal values or rules of the child's culture but reflects something more universal in development which would occur in any culture" (Kohlberg, 1966). At each stage, the same basic moral concept is defined, but at each higher stage this definition is more differentiated, more integrated, and more universal. Movement from one stage to the next does not involve an addition to the earlier stage but is a reorganization displacing the less advanced stage.

> "Each stage of development, then is a better cognitive organization than the one before it, one which takes account of everything in the previous stage, but making new distinctions and organizing them into a more comprehensive or equilibrated structure (Kohlberg, 1968, p. 186)

Each of these different and sequential modes of thought forms a 'structured whole' characterized by uniquely different thought organization. Progression to a higher thought organization (stage) involves the underlying thought organization that is being used to process information, rather than mere addition of knowledge or information. Thus, these stages may be viewed as hierarchial integrations which form an order of "increasingly differentiated and integrated structures to fulfill a common function" (Kohlberg, 1970b, p. 4). Accordingly, higher structures displace the structures found at lower stages.

According to Kohlberg (1970b), these stages are viewed as neither the direct reflection of maturation nor the direct reflection of

learning in the sense of specific environmental stimulus exposures, but rather, they represent the equilibrated pattern of interaction between the organism and the environment. The process of equilibration refers to how the developing organism uses its system of action to control itself and direct its interaction with the environment and how the actions of the growing organism direct and regulate its own development (Langer, 1969). When such a balance cannot be obtained in a functioning cognitive structure, a reintegration occurs which evolves into a new higher order cognitive structure. In sum, Kohlberg (1970b) states that individuals pass from one ethical stage to another for the same reason that they progress cognitively; through adaptation and accommodation to the environment.

For this developmental process of increasing differentiation to occur, the individual must be involved in role-taking opportunities within the family, peer group and secondary institutions. Role-taking is the ability to become aware of the other person's position, take the attitude of the other person, and put oneself in the place of the other person.

The large cognitive component of moral role-taking is suggested by correlations between the development of moral judgment and cognitive advance on intelligence tests. Kohlberg (1969) presents evidence for intelligence as a necessary, but not sufficient, condition for achieving higher levels of moral maturity. As no relationship ($r = 0.16$) is found between I.Q. and moral maturity in the above average group, this suggests that children

1 - pure Stage 1
(2) - mostly Stage 1, some Stage 2
1(2)? - can't tell whether it is Stage 1 or Stage 2
1 ? - seems likely Stage 1, but not sure
2 - pure Stage 2
2(1) - mostly Stage 2, some Stage 1
2(1)? - can't tell whether it is Stage 2 or Stage 1
2(3) - mostly Stage 2, some Stage 3
2(3)? - can't tell whether it is Stage 2 or Stage 3
2 ? - seems likely Stage 2, but not sure
3 - pure Stage 3

According to Kohlberg's theory, the only possible mixed scores are at adjacent stages, eg. 1(2), 2(3), etc.. The major stage always appears first, followed by the minor stage in brackets. However, other mixed scores are occasionally assigned when there is uncertainty, eg. a score of 1(2)? means that the response is probably Stage 1 but may be Stage 2. These uncertainties may be corrected after analyzing all responses, eg. a student receiving scores of 3(2)?, 3(2), 2(3), and 3 would have this dilemma scored as 3. Thus, the stage scores are summed and an average stage score assigned to each dilemma.

After scoring all responses, a global score was calculated. If the average stage score was of a 'pure' type (such as 1, 2, 3, 4, 5, 6) a weight of 3 units was assigned. When there was a 'mixed' score (such as 1(2), 2(3), 3(2), etc.), two scores were assigned: the major type received a weight of 2, and the minor type received a weight of 1. The sum of each level was obtained and converted to percentages. If 50% or more of the responses were at a given stage, this became the major stage in the global score. An example will illustrate this procedure.

who are above average in I.Q. are equally likely to be low or high in moral maturity (Kohlberg, 1969). In support of this finding, Tracy (1971) found no association between I.Q. and moral maturity. Thus, although I.Q. may be an important factor in cognitive restructuring, it is clearly not the only one.

Further, Kohlberg (1976) found that children from higher socio-economic levels tend to be more ethically advanced than children from lower levels. This he believes to be primarily the result of the difference in opportunities for the assumption of roles of responsibility, and in the difference in encouragement in participation in family discussions related to moral conflict situations. The general contention is that parents in the lower socio-economic class, and in the authoritarian subculture, tend to use their authority in a way that promotes unquestioning acceptance of adult-imposed rules and a 'letter-of-the-law' concept of morality. This generalization does not hold true for studies that control for socio-economic status (Tracy, 1971). That lower class children were found to exhibit moral maturity scores as high as their upper class counterparts suggests that authoritarian restrictiveness, attributed to low socio-economic groups, is perhaps misplaced. Further, Kohlberg found that popular children progress to higher levels of development significantly faster than unpopular children. Therefore, it is this experience of role-taking that allows some children (participants) to advance over others (non-participants).

Moral development is therefore dependent upon the availability of social experiences which stimulate the cognitive structures

producing an organized structural relationship between the self and others. Kohlberg (1969) suggests that variations in role-taking opportunities exist not only in terms of cognitive ability, relationship with one's family, social status, and peer group interactions, but also, in sex-role development.

Although Kohlberg (1967) emphasizes the fact that females achieve the 'Good-Girl' (Stage 3) morality earlier than males and remain in this stage for a longer period of time, so that most adult Stage 3 persons are female, there is no substantial evidence to support or reject this claim. Until recently, the sex-role stereotyping of women has led society to direct our young girls toward the position of 'dutiful wife' and 'loving mother', thus differentiating the "prestige of goodness from the prestige of power in defining their own roles" (Kohlberg, 1969, p. 423). However, the past decade has witnessed an increasing number of women who are questioning the validity of their Stage 3 'Good-Girl' orientation. The decrease in the acceptance of the traditional marriage role (ie. mother as nurturer, father as provider) is placing today's women in a conflicting situation causing a disequilibrium between the cognitive and the environment. By demanding equality with their male counterparts, the availability of role-taking opportunities is increased and thus, movement to a higher level of moral reasoning should proceed.

As large groups of moral concepts acquire meaning only in late childhood and adolescence, Kohlberg (1969) suggests a point-to-point relationship between his stages of moral development and Piaget's stages of cognitive development. Each involves basic transformations

of cognitive structures. Cognitive structures, evolving through the interaction between the environment and the structure of the organism, are defined as schemata (rules for processing information) and represent successive forms of psychological equilibrium; a balance between accommodation and assimilation. When such a balance cannot be obtained in a functioning cognitive structure, a reintegration occurs evolving into a new higher order cognitive structure (Kohlberg, 1970; Sigel, 1964). As a result, the existence of moral stages can be viewed as a basic structural component in 'normal' development; each stage implying distinct and qualitatively different modes of thinking.

As each of these sequential and structured modes of thought form a structured whole (Piaget, 1958), mere addition of knowledge is insufficient for moral problem solving. The important factor is the underlying thought organization, or structural base (stage), under which the individual is operating (Inhelder and Sinclair, 1969; Kohlberg, 1970a). This rationale suggests that the relationship between Piaget's logical stages and Kohlberg's moral stages is such that cognitive maturity is a necessary precondition for moral judgment maturity.

To illustrate, Kohlberg (1976) found that 50% of late adolescents and adults are capable of full formal reasoning, but only 10% of these adults display principled moral reasoning. Therefore, attainment of a specific stage in logical thought does not imply that the individual will operate at the same stage in moral thought. The latter may be, and frequently is, lower, but never higher.

Turiel:

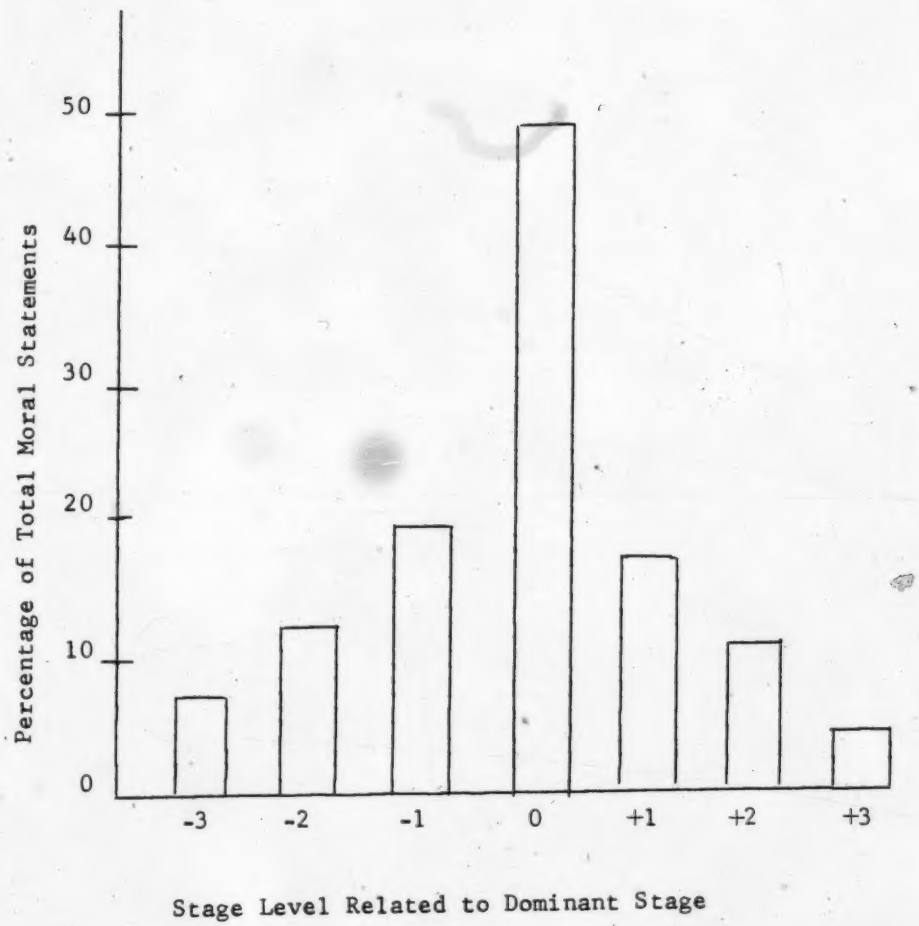
Turiel (1966, 1969, 1972), in line with Kohlberg's postulation (1963, 1968) that moral stages form an invariant sequence in which the attainment of a stage is dependent on the attainment of preceeding stages, concerns himself with the question of how the individual moves from one stage to the next.

Piaget's developmental stages give the impression that a child functions entirely in one stage and when movement occurs, it is from one discrete stage to the next. However, Langer (1969) and Elkind (1969) have shown this not to be the case. Elkind (1968) concluded that conservation of mass does not usually appear before ages seven to eight, conservation of weight does not appear before the ages of nine to ten, and conservation of volume does not usually appear before the age of eleven. Décalage (stage mixture) exists when a child exhibits stage usage representative of two or more stages (Flavell, 1963).

Stage mixture (décalage) is also observed in Kohlberg's moral developmental model. Turiel found that few individuals answered Kohlberg's moral dilemma situations with one 'pure stage' approach. Rather, the response pattern depicted a dominant stage, with the highest percent of usage; adjacent stages with the next highest percentage; and those stages which are one stage removed from the dominant stage as having the lowest percentage of usage. Figure 2 is a graphic representation of the existence of such a stage mixture (décalage). This suggests that statements at stages above the individual's own stage are increasingly more difficult to

Figure 2

Profile of Moral Stage Usage
on Kohlberg's Moral Judgment Interview
(Rest, Turiel, and Kohlberg, 1969)



comprehend, and that statements at levels below are comprehended even though the individual does not spontaneously use these levels.

Validation of this concept comes from Rest's (1973) studies in which he found that more than 50% of an individual's thinking is always at one stage, with the remainder at the next adjacent stage (which the individual is either leaving or moving into).

The theoretical implications of stage mixture, as discussed by Turiel (1969), imply it to be a necessary factor if development is to proceed. High stage mixture has been associated with periods of reintegration, followed by a stabilization process at a new level.

> "Stage mixture serves to facilitate the perception of contradictions, making the individual more susceptible to disequilibrium, and consequently, more likely to progress developmentally" (Turiel, 1969, p. 130).

Turiel (1967) suggests that this disequilibrium in the mental structures underlying moral reasoning, can be induced by exposure to conflicting moral arguments. Indeed, Smedslund's (1961) research with the concept of conservation indicates that cognitive conflict may lead to reorganization of structure. Similarly, Piaget and Inhelder (1958) contend that successive movement from structure to structure occurs by the establishment of a new equilibrium after the occurrence of disequilibrium. By creating a cognitive dissonance and listening to others' arguments, the individual will be confronted with aspects of moral conflict that were previously inaccessible to him. If these arguments contain some higher stage reasoning than the individual is presently at, they are often used to resolve hidden disequilibrium, thus incorporating some higher stage reasoning.

The advance from one moral stage to the next is brought about by cognitive conflict, since resolution of conflict leads to the reorganization of structure; an idea similar to Piaget's progression in cognitive development from equilibrium, through disequilibrium, to a higher level of equilibrium (Turiel, 1966, 1969).

Support for Turiel's model has come from various experimental studies (Keasey, 1973; Tracy and Cross, 1973; Turiel, 1966) which demonstrate that adolescents display an increased amount of higher stage reasoning following their exposure to conflicting arguments containing higher stage reasoning. With regard to stage preference, it has been suggested (Rest, Turiel, and Kohlberg, 1969) that subjects tend to reject statements lower than their own stage and (Rest, 1973) there is an ordered preference for the highest stage one can comprehend, regardless of one's own spontaneous stage.

In summary, this transformational process refers to the means by which the developing organism utilizes its system of action for self-control, and to direct its interaction with the environment (Langer, 1969). To meet this criterion of structural organization, the following must be observed. First, the change is irreversible and cannot be undone, forgotten, or replaced. Second, the change is a change in shape, pattern or quality of response and not merely a change in frequency or correctness. Third, the change is general over a field of responses. Fourth, the change is sequential, and lastly, the change is hierarchial, where later forms dominate or integrate the earlier forms of responses (Kohlberg, 1970b).

RIGIDITY

The concept of rigidity has proven a difficult term to define as it is used to describe a wide variety of behavior patterns that are characterized by the inability to change habits, sets, attitudes, and discriminations (Chown, 1959). Although it has been studied as a neurologically-determined pecularity of perception; as a type of perceptual defense; and as a manifestation of basic personality variables, there is still little agreement as to its identity or components.

Personality and Rigidity:

In reviewing the pertinent literature (Cattel and Tiner, 1949; Cattel and Winder, 1952), it becomes apparent that the characteristics of rigidity have some common factor which is variable with rigidity at one extreme and flexibility at the other. Thus, early investigations (Cattel, 1952; Rokeach, 1948; Pinard, 1932) concluded that rigidity-flexibility is, in fact, "a general factor in personality organization and functioning" (Cowen and Thompson, 1951, p. 175), which permeates every sphere of life. However, various other studies (Applezweig, 1951; Goldstein, 1953; Luchins, 1949; Wolpert, 1955) disagree with the above contention and consider rigidity to be a task specific factor. Although the evolution of these two diametrically opposed viewpoints would be an interesting study in itself, it is the author's intention to explore the former view of a general personality factor which directs the individual in his daily decisions and way of life. Thus, the following studies tend to agree with

Rocheach's (1960) supposition that the degree of rigidity displayed by an individual has a relationship to personality and development.

Goldstein (1941) administered a test battery which included sorting, matching and classification tests and found that far from being a perceptual perculiarity of certain individuals - as much of the former research had implied - some degree of rigidity, or 'slowness of response adaptation', is a natural human phenomenon. He observed two distinct types of rigid responses among these individuals who exhibited rigidity to an extreme degree: 1. when subjects were faced with a problem which was too difficult, an extreme anxious blocking took place, causing refusal to acknowledge any change in preferred stimuli and to cling rigidly to any previous response which had formerly led to success; 2. when subjects were offered stimuli which aroused such strong responses they were unable to break off their reaction upon stimuli change. This distinction supported Goldstein's assumption that "variation in degree of rigidity arose from personality variables".

Cowen, Weiner and Hess (1953) administered (a) their newly developed Einstellung test based on the same principles as the water jar test, but taking the form of an alphabet maze, and (b) the Luchins' water jar test, to 59 college undergraduates. The authors found a low, but significant, correlation between rigidity scores on the two structurally similar tests and thereby concluded that a generalization of specific problem-solving rigidity had been demonstrated. Schmidt, Fonda and Wesley (1954) conducted a study in rebuttal of Luchins' (1949) statement that a problem-solving

rigidity "...is not a function of the personality per se, but of partial field conditions" (p. 438). Their findings supported their hypothesis that rigidity was a consistent personality trait.

McCandless (1961) supports this relationship in observing that parents who are highly conforming to approved standards of behavior tend to produce authoritarian offspring. Rubenowitz (1963) agrees with McCandless' contention that it is through reaction to his environment in a manner associated with strong positive reinforcement that the child develops consistent methods. Further, Rubenowitz suggests that the child is influenced by his parents' disapproval of certain thoughts and actions, and how such reactions must be repressed. Thus, rigidity, determined by early environmental influences, stems from the need to organize the world around us so that it is experienced as fairly stable and secure. Harsh and Shreikel (1950) suggest that these persons lacking in this mode of development, have possibly been exposed to a variegated environment, resulting in the inability, or lack of desire, to achieve or be consistent from one situation to another. Rubenowitz thereby concludes:

> ....a general factor of flexibility-rigidity can be identified, a factor which accounts for a considerable part of the variance in thinking, attitudes and displayed behavior (1963, p. 232).

Personality Rigidity as Related to Cognitive Functioning:

As the form of rigidity under study is considered to have its roots in personality development, the relation to cognitive functioning is of importance due to its implications within moral development. Rokeach (1960) suggests that:

> "The extent to which a person's belief system is open or closed is a generalized state of mind which will reveal itself in politics and religion, the way he goes about solving intellectual problems" (Rokeach, 1960, p. 7).

Similar to Kohlberg (1958), Rokeach emphasizes the structure rather than the content of beliefs; the relative openness or closedness of a mind cutting across the specific content of belief and resting on the integration of three concepts: personality, ideology, and cognitive activities. Thus, if one can understand the means by which the individual relates himself to the world of ideas, it is possible to postulate the way he relates himself to the world of people, and to authority.

With regard to Horney's (1937) contention that rigidity is a resultant of accumulated tension (anxiety), Rokeach (1960) hypothesized that:

> "When ambivalence toward parents isn't permitted expression, it leads to both anxiety and to a narrowing of possibilities for identification with persons outside the family. Both, in turn, are interpreted as leading to the development of a closed belief system" (p. 365).

Thus, with the narrowing of possibilities for identification with persons outside the family, greater introversion and perhaps greater conformity can be expected with closed belief systems. Accordingly, Frenkel-Brunswick (1954), concerned with the interactions between personality, belief and cognition, developed the notion that the repression of these ambivalent feelings leads the individual to develop a "generalized need to structure his world rigidly, a pervasive tendency to premature closure, and a general intolerance of cognitive ambiguity" (Rokeach, 1960, p. 17).

Further, Rokeach (1960) contends that the expression from closed belief systems is 'dogmatic', which suggests more than the concept of rigidity. In dealing with the problem of thinking and the relationship between personality and problem-solving, he describes rigidity as "resistance to change of single beliefs (or sets, or habits)", and dogmatism as "resistance to change of systems of beliefs"; the former involving analytical thinking and the latter, synthesis. He accepts cognitive functioning (thinking, remembering, perceiving) as part of the personality and considers it related to, and part of, his concept of dogmatism.

However, in dealing with this aspect of Rokeach's investigation, Rubenowitz (1963) denies the existence of such a relationship and concludes that ideological orientations are distinguishable from conceptual behavior in intellectual problem-solving. Thus, aside from this difference in opinion, Rubenowitz finds his concept of rigidity, taking in both personality and social factors, very similar to Rokeach's concept of dogmatism.

Rigidity as Related to Moral Development:

According to Leach (1967), the concept of rigidity must be understood in a moral as well as in a socio-psychological sense. A highly rigid personality is characterized by two main attributes: 1. orientation toward authority, hence being a conformist; and 2. resistance to the introduction of any dissonance, which a consideration of moral principles would bring (Kay, 1975). Hence, the rigid individual is intolerant of any change in his social environment and is seemingly unable to abstract moral principles from specific

regulations.

From a survey of the pertinent literature (Kent and Davies, 1957; Kohn and Schooler, 1969; Lipset, 1961), it is suggested that the individual's degree of flexibility is directly related to the quality of parental control and family life.

From birth, the child begins to manipulate his environment and learns to react to it in a manner which is positively reinforced rather than in ways which are disapproved of. According to Horney (1937), the degree of repression found in the personality structure of an individual is a function of the degree to which the child "is hampered in his striving to explore the world around him.. and is found to accept blindly, norms, values, behavior, and restrictions of authority" (Rubenowitz, 1963, p. 238); resulting in accumulated tension and hence, compulsive rigidity. Although institutions with moral authority (law, government, family, etc.,) cater to basically the same moral rules regardless of the individual's particular position in society, "the child's position in society does, to a large extent, determine his interpretations of these institutions and rules" (Kohlberg, 1966).

Higher social class appears to produce less acceptance of conformity to authority as a moral norm, and places more emphasis on self-direction and the reasons which lay behind events. Thus, the individual progresses to the point where he can understand the fact that moral regulations are expressions of moral principles, which are applicable beyond the immediate situation. A parallel may be drawn here, with reference to the Krebs and Kohlberg (1949)

study on cheating: 15% of the students showing some principled thinking, cheated, as compared to 55% of the conventional subjects and 70% of the preconventional subjects. Nevertheless, the fact that 15% of the principled subjects did cheat suggests that factors additional to moral judgment are necessary for principled moral reasoning to be transformed into moral action. Such factors may include the situation and its pressures and/or the individual's particular motives and emotions. This suggests that:

> One cannot follow moral principles if one does not understand (or believe in) moral principles. However, one can reason in terms of principles and not live up to these principles (Kohlberg, 1976, p. 672).

In contrast, however, the lower class child is assailed by a stream of dogmatic, inflexible authoritarian demands causing him to formulate moral beliefs from concrete reactions to specific situations. Such environmental surroundings prevent the conscious formation of a generalized code of conduct based on moral principles and thus retards the development of a coherent philosphy of life. Consequently, these children learn only by rote and, as demonstrated by Frenkel-Brunswick (1949), tend to retain parental favour and approval by inconsistent learning and application of the specific forms of required behavior. Thus, the young child learns to subdue impulses rather than control them; in obedience to external demands rather than internalized standards.

With regard to child-rearing habits as being an influential factor in the development of moral reasoning, Rosenthal, Finkelstein, and Robertson (1959) showed that mothers who were rigid and overcontrolling, produced children who were overconforming, submissive

to authority, and extremely conventional and rule-bound in their attitudes and behavior. Similar findings were described by Baldwin (1948) who found that democratic handling produced children with qualities associated with a fearless exploration of the environment, while autocratic and authoritative handling produced quiet, non-resistive, passive and overconventional children. Further, Radke (1956) conducted a three-generation study in which he showed that parents who had undergone rigid discipline as children, tended to utilize similar methods with their own children, and that those children displaying a lack of comprehension and internalization, tended to obey by rote rather than by intention.

Kohlberg (1964) confirmed these findings and concluded that the non-physical forms of control, employed by the middle class and those with more democratic habits of childrearing, not only elicited sensitivity to moral principles, but also produced the powerful guilt control which compelled such children to subscribe to them. In sum:

> The conditions which enhance moral flexibility in a child, also propel him toward the moral autonomy it requires (Kohlberg, 1975, p. 119).

These studies suggested psychological rigidity to be initially founded in the pattern elicited by parental approval and disapproval, and later, to be reinforced by peers and society as a whole. Two extremes of behavior appear: random, undirected (nonrigid) behavior; and, directed (highly rigid) behavior. It is further suggested that the former coincides with the attainment of a higher stage of moral reasoning (Individual Rights, Justice, Reciprocity, and Equality),

whereas the latter appear to coincide with a lower state of moral reasoning (Egocentrism, Order, Conformity, and Duty).

It is the author's contention then, that if a general factor of rigidity does exist, the rigid behavior displayed by an individual could be attributed to his personality development, and thereby would influence his moral development. However, this does not suggest that in every day experience, rigidity may be detected as lying at the opposite end of a continuum from flexibility, but rather that one can differentiate the conventional thinker (or even the principled thinker), who is more flexible in thought, from the preconventional thinker who is more rigidly organized.

This form of rigidity appears, in many respects, to be part of a reduction process of randomness, and therefore might be considered a positive factor in adjustment within our society.

Thus, an evaluation of the studies reviewed lead the present author to suggest that personality rigidity is an important element in the development of moral judgment. The present study is designed to test the following postulates.

HYPOTHESES

Major Hypotheses:

I. There will be a significant positive correlation found between those individuals scoring high (more flexible in thought) on the Barron Complexity Scale (BCS) and Kohlberg's Stages 4, 5, and 6.

II. There will be a significant positive correlation found between those individuals who solve at least three of four critical tasks (ability to change mental set) of the Luchins' Einstellung Test (ET) by direct methods and Kohlberg's Stages 4, 5, 6.

III. There will be a significant positive correlation found between those individuals scoring high on the BCS and those individuals who solve at least three of four critical tasks of the ET by direct methods.

Minor Hypothesis:

I. There will be a significant positive correlation between personality rigidity, problem-solving rigidity, levels of moral judgment and social class.

CHAPTER III

METHODS

Design:

The purpose of this study is to investigate the presence of a fundamental personality factor behind manifestations of rigidity of thinking and attitudes, and its relationship to the level of moral development.

In order to determine a general personality factor, each subject was administered two tests of rigidity; the Barron Complexity Scale (BCS), which measures personality rigidity; and the Einstellung Water Jar Test (ET), which measures problem-solving rigidity. To determine the level of moral reasoning, each subject was also presented with Form A of Kohlberg's Moral Dilemmas (KMD).

To ensure a minimal amount of transference from measure to measure affecting the response outcome, each group of subjects was presented with the test battery in a different sequence: Group I received A (BCS), B (KMD), C (ET); Group II received BCA; and Group III received CAB.

The present study was constructed to test three major hypotheses and one minor hypothesis. Being a correlational study, this enables comparison between the two tests of rigidity as well as their relationship to the level of moral reasoning.

As previously stated, females are no longer accepting the conventional role of 'housewife and mother', but rather, they are becoming more involved in role-taking opportunities within society.

Therefore, it is the author's contention that they have progressed from Kohlberg's Stage 3 position (Kohlberg, 1967) to a higher, more autonomous level. Thus, each of the major hypotheses was tested for male and female subjects separately as well as in a combined sample.

Further, as the home environment contributes significantly to the various aspects of a child's environment (Kohlberg, 1966: Kohn and Schooler, 1969) it was felt necessary to investigate the correlation between socio-economic class, rigidity and levels of moral reasoning. Thus, the subjects were separated into two socio-economic levels (high-middle to high class; and low to low-middle class), according to the Blishen Socio-Economic Index for Parental Occupations.

Sample:

The population studied in this research consisted of forty-five young adults enrolled in an Introductory Educational Psychology Course at the University of Alberta. Each was a member of one of the three seminar groups which had been assigned to the present author at the beginning of the academic term. Each student was briefly informed as to the nature of the study and was then given the opportunity to choose whether he/she wished to be a participant or not. It was stressed however, that participation or non-participation would have no effect on the seminar grade.

The sample consisted of 24 females and 21 males, and the mean age was 21.5 years.

TEST MATERIALS

Blishen Socio-Economic Index for Occupations:

To determine each respondant's social class, the Blishen Socio-Economic Index for Occupations was employed. Class allocation was based on the occupation of the main wage earner of the family, usually the father. This scale, based on the 1961 Canadian census, ranks 320 occupations on the basis of yearly income and years of formal education. The rank correlation between this index and the 1951 occupational class scale was .96 indicating both stability in the structure over time and similarity in results despite variations in procedure.

For this study, the main wage earner's occupation was indicated by the student and given an index number according to the Blishen Scale. By collapsing the six occupational categories into two groups, an ordinal scale resulted. The occupations falling between 52 and 77, inclusively, of the index values were combined to form the category of 'middle-high to high' social class which included those jobs which are generally referred to as professional, semi-professional, company ownership, and management (eg. lawyers, doctors, educators, industrial owners, draughtsmen). Secondly, those occupations falling between 25 and 51 inclusively of the index values were categorized as 'low to middle-low' class, representing technical occupations, real estate agents, as well as the semi-skilled and manual labourers.

Organized as an ordinal variable, the social class structure of this population shows the following distribution.

Table I

Stratification of Students
by Major Parental Occupations

Class	No.	%
Middle-High to High	25	56%
Low to Low-Middle	20	44%
Total	45	100%

Moral Judgment:

An individual's level of moral reasoning may be assessed by the administration of Kohlberg's Moral Dilemma Situations. Administrational procedures may follow one of two routes, interview or pen and pencil, which require the subject to respond to hypothetical social dilemmas including elaboration on and justification of the choices made. The present study made use of the pen and pencil version.

Kohlberg (1976) has constructed an extensive rating guide for each of his ten moral dilemmas, but as Tracy (1971) and Hudgins (1972) have pointed out, Kohlberg advises that three stories provide an adequate assessment of the individual's level of moral reasoning. Test-retest reliability ranges from .65 to .80 and construct validity is evident in the correlations of stages across the different moral dilemmas ranging from .31 to .75 in early studies, and more recently, .80 (Kohlberg, 1976).

With this in mind, this study employed the shortened form of Kohlberg's Scale (See Appendix A), Form A, which is recommended for

young adults as both the stories and the scoring system are the most extensively developed (Kohlberg, 1976). Subjects were presented with three situations in which acts of obedience to legal-social rules, or to the commands of authority, conflict with human needs or the welfare of other individuals (Kohlberg, 1963b). As the stories do not have a clear, culturally correct answer, moral reasoning, rather than moral knowledge, is employed to answer the questions.

Responses to each dilemma may be scored by two methods: (1) sentence coding, in which every sentence is assigned a stage score as prescribed in the detailed issue manual; or (2) Global Rating, in which the principal rationale in the response is given a stage score. The present study employed the method of Global Rating, which was scored by two trained raters. These particular raters were chosen by the author as they were trained Kohlberg scorers with a great deal of experience in scoring Kohlberg dilemmas. However, minor limitations were evident in scoring as the protocol used in this study was the new 1976 version, and the raters were trained in 1968. The inter-judge reliability on fifteen randomly chosen protocols was .87.

Barron Complexity Scale:

Implicit in much of the research on personality rigidity are the concepts of originality and creativity. Eysenck (1940), in his studies of aesthetic judgments, isolated the "K" factor which categorized subjects according to their preference for the simple or the complex in a variety of aesthetic experiences. Barron (1953) linked these findings with the rigidity-flexibility dimension, explaining the relationship between flexibility and preference for the complex

via the intervening variables of originality and creativity. Barron states that originality, and hence creativity, is positively associated with preference for the complex as it demands the fullest possible utilization of stimuli from the environment (Barron, 1963).

Barron (1953, 1963) deals initially with the Welsch Figure Preference Test in which a disliking of complex figures was found to be related to such characteristics as rigidity, social conformity, subservience to authority, political-economic conservatism and ethnocentrism. A liking for complex figures points to originality, verbal fluency, expression as opposed to repression of impulses, and mental alertness.

Through further research, Barron (1963b) found a significant relationship between the Figure Preference Test and a measure of independent judgment, now referred to as the Barron Welsch Art Scale (BWAC). The BWAC is found to measure 'complexity of the independents' with a low score. Further, those high on complexity are described as flexible, independent, impulsive, non-conforming, and mentally quick, whereas those low on complexity are described as rigid, repressive, conforming and conventional.

As the BWAC, a nonverbal measure for preference for complexity, was not feasible for group administration of mail-out techniques, an inventory type true/false scale was devised by Barron (1953). This verbal measure of preference, referred to as the Barron Complexity Scale (BCS), was originally composed of 975 items derived from the Minnesota Multiphasic Personality Inventory (MMPI), the California Psychology Inventory (CPI), and the Institute of Personality

Assessment and Research (IPAR). Through analysis, the 50-item verbal scale (See Appendix B), when scored on the same population from which it was derived, correlated .67 with scores on the BWAC for the 180 students tested. Further, Barron reports a Kuder-Richardson split-half (odd-even) reliability of .54 and a test-retest reliability of .74 for the BCS.

Barron sums up the personality correlates of the preference for complexity, as measured by this scale, thus:

1. Preference for complexity is related positively to rapid personal tempo, verbal fluency, impulsiveness, and expansiveness.

2. Preference for complexity is related negatively to rigidity, control of impulse by repression, social conformity, ethnocentrism, and political conservatism.

3. Preference for complexity is related positively to independence of judgment, originality, and breadth of interest.

Further, low scorers are described as being characterized by such factors as Good Judgment, Adjustment and Abundance of Values. On the other extreme, the complex person is found to be unadjusted; not fitting in very well with the world as it is. Although adjustment is defined as "getting along in the world as it is, adequate degree of social conformity, and the capacity to adapt to a wide range of conditions" (Barron, 1963a, p.191), Barron suggests that the unadjusted, or more complex person, may perceive his surroundings more accurately than does the better adjusted fellow.

Thus, the BCS, with a low score measuring rigidity defined as 'inflexibility of thought and manner, stubborn, pedantic, unbending, firm', was administered to measure personality rigidity.

Luchins' Einstellung Test:

If personality rigidity is a general response characteristic which may be indicative of an individual's behavior, then similar effects should be evident in perception, problem-solving, emotions, etc.. To provide greater depth, the Luchins' Einstellung Test, to measure problem-solving rigidity, was included in the test battery.

Einstellung refers to the "tendency to continue using an oft-repeated mode of solution in subsequent problems which are capable of solution bo other, generally more simple, methods" (Luchins, 1951, p. 303). However, Rokeach (1948) contends that maintenance of a particular set could be explained in terms of an underlying rigidity in the individual subjects.

The test series of problems, involving the manipulation of quart jars to obtain a specified amount of water (See Appendix C), was given to the individual groups in the afore mentioned sequence. The initial problem is for illustrative purposes only. Problems two through six are the Einstellung or 'set' problems, which are solvable in each case by the same series of operations. Upon establishment of the set, a series of four critical problems, solvable either by the same complex method or by an extremely direct and simple method involving only one manipulation, was introduced. The criticals are then followed by four ext nction problems solvable by the direct procedure but not by the complex procedure.

Persistence in the use of the more complex solution in the critical problems was considered indicative of rigidity, since a simpler, more direct solution was available. Ability to shift

one's set and utilize the direct solution was felt to be indicative of flexibility.

Test Administration

The study took 1.5 hours to administer. General instructions and time limits were given prior to the test administration. S's were required to stop at the end of the allotted time limit, and when instructed to do so, they then proceded to the next test, first reading the brief instructions and then completing the required information. As previously mentioned, the test battery was presented in a different sequence to each group of S's: Group I received the Barron Complexity Scale (A), Kohlberg's Moral Dilemmas (B), and Luchins' Einstellung Test (C); Group II received B, C, A; and Group III received C, A, B. Identification numbers were assigned in order to guarantee anonymity.

Limitations: Several factors seemingly influence the conclusions that can be drawn from this study.

1. It is possible that the order of test administration may have some influence on the responses. However, as noted above, each group of S's was presented the test battery in a different order. This was to ensure minimal transference.
2. There might be a difference in some scores on the Kohlberg Moral Dilemma protocols if the raters were more familiar with the 1976 version of the test. The raters felt confident, however, that the moral stage was

apparent in each case and therefore the sample provided a fairly accurate picture of the moral reasoning abilities of young adults.

CHAPTER IV

RESULTS

The purpose of this study was to determine level of moral development and to explore related differences in rigidity of personality and problem-solving rigidity. Each measure of rigidity was considered separately to allow for comparison between the two. In so doing it was possible to ascertain whether rigidity characteristics in young adults have an effect on their level of moral reasoning. Differences in sex and socio-economic status were investigated within each test variable.

Kohlberg Moral Development Scale:

The Kohlberg Moral Development Scale was administered to determine each S's stage of moral development. Due to the hierarchial nature of the stages, the Moral Development Scale also defined each S's level of moral maturity and the degree of stage mixture used in response to questions regarding moral issues.

Moral Maturity Score: Two trained scorers used Kohlberg's Global Rating Guide (Kohlberg, 1976) to determine the level of moral reasoning for each subject. Fifteen randomly chosen protocols were selected for comparison of results. The interjudge reliability was .87.

Each dilemma was read in its entirety and then each response assigned a Stage score. A description of possible response patterns is as follows:

1) the final scores on each story for Student 'A' are: 2(3), 3, 3(2)

	Stage 2	Stage 3
2) the assigned weights are:		
Story 1	2	1
Story 2	0	3
Story 3	1	2
3) the totals are:	3	6

4) the percentages are: 3/9 or 33 1/3%, for Stage 2
6/9 or 66 2/3%, for Stage 3

Therefore, the global score for Student 'A' is 3(2).

For six subjects there was not one stage which received at least 50% of the scores and it was therefore not possible to assign a global score. Thus, to facilitate further calculations, these six protocols were removed from the analysis and the population sample was decreased from 45 to 39.

In addition to assigning each subject a major stage, a moral maturity score was also assigned. This was based on a system of stage weighting, assigning Stage 1 a weight of 1, Stage 2 a weight of 2, etc.. In this way, a sum is obtained of the frequency of responses at each stage. The weight of each stage used by a subject was multiplied by the percentage of scores at this stage. Accordingly, moral maturity scores may range from 100 (all Stage 1) to 600 (all Stage 6). Table 2 illustrates the scoring procedures for a three story protocol.

Table 2

Illustrative Scoring Procedure

Profile of One Subject on the
Kohlberg Moral Development Scale

Moral Stages	Kohlberg Dilemmas III, III', I	Sum	%	Weighted Percentages
1	- - -	0	0.0	0.0
2	- 3 1	4	30.9	61.8
3	2 2 2	6	46.1	138.3
4	1 - 1	2	15.3	61.2
5	- 1 -	1	7.7	38.5
6	- - -	0	0.0	0.0
	Total Moral Maturity Score			299.8

Scoring revealed the S's had moral maturity scores ranging from 241 to 593, with a mean score of 372.02.

Stage Mixture: The degree of stage mixture, described earlier, may be readily determined from the protocol. Two methods of determining stage mixture were used in the present study. The first method was based on Turiel's (1969) findings that the degree of mixture has different implications at different points in development. In the early stages there is a stage consistency due to slow developmental progress, but as the child acquires concrete operational thought and enters the period of formal operations, he tends to display a substantial increase in stage mixture due to his increased exposure to

societal attitudes, mores and customs. Upon stabilization of the higher stages of cognitive functioning, stage mixture tends to decrease (Turiel, 1969). Studies indicated (Kohlberg and Kramer, 1969; Turiel, 1969) that S's at lower stages of moral judgment (Stages 1 to 3) continue to develop toward Stage 4 from ages 16 to 24. These results paralleled the tendency for S's who are not yet formal operational to become formal operational in the period from 16 to 25 or 30 years of age. Further, stage mixture in adulthood was found to be less at the higher stages than at the lower stages of moral development. According to Kohlberg and Kramer (1969):

> Adult development is primarily a matter of stabilization, a dropping out of childish modes of thought rather than the formation of new or higher modes of thought. This stabilization of moral thought is not only reflected in the trends of stage usage for the group as a whole, it is also reflected in the trends of variability of stage usage within individuals.

To determine degree of stage mixture, a variation score was computed by multiplying the percentage of S's responses on a stage by the number of stages separating that stage from the modal stage. These products were then summed. The modal stage is that stage receiving the highest percentage of responses. Table 3 illustrates this procedure.

Table 3

Illustrative Scoring Procedure
for Variation Scores

Profile of One Subject on the
Kohlberg Moral Development Scale

Moral Stages	Dilemma I % of Responses	Number of Stages From the Modal Stage	%
1	0.0	2	0.0
2	30.9	1	30.9
3	46.1	0	0.0
4	15.3	1	15.3
5	7.7	2	15.4
6	0.0	3	0.0
	Total Variance Score:		61.6

The mean variation score of the 39 usable profiles was 35.96. To compare the variation scores in Kramer's (1969) study with the variation scores of this sample, it was necessary to group the scores into the lower stage (with a modal stage of 1, 2, or 3) and the higher stage (with a modal stage of 4, 5, or 6). As stated by Turiel (1969), Stage 4 can be regarded as advanced for our purposes since there were very few S's who responded at the Stage 5 or 6 level. Table 4 presents the comparison of the trend toward stabilization of the higher stages among young adults.

Table 4

Comparison of the Mean Variation Scores
for S's at Lower and Higher Stages

Dominant Stage Group	Kramer Study (1969) Ages: 14-26	Present Study Ages: 18-29
Lower Stage	104	37.64
Higher Stage	98	34.28

The present study's significantly lower variation scores may be attributed to both a smaller sample size and an older range of S's.

The second method of determining stage mixture was based on Kohlberg's concept of response distribution. A 'pure' type is considered to be a subject who uses a single stage of reasoning 75% of the time. This criterion for 'purity of moral reasoning' was found to be too stringent for the present study. The responses were therefore classified according to Percival's extension of the basic types (Percival, 1970).

a. Dominant type classification: If at least 53% of a S's responses conform to that particular type (eg. Stage 3), and if the score for any other type was not greater than 30%.

b. Mixed type classification: If the S's responses were at least 35% of one type (but not greater than 53%) and at least 70% of his total responses are accounted for by no more than two type scores.

c. Total mixed classification: If the S's responses reveal no more than 35% content of any one type.

d. Mixed V-VI classification: If the S's responses equal at least 60% by combining Stages 5 and 6.

Table 5

Classification of Responses
on the Kohlberg Moral Development Scale,
Using Percival's Classification Scheme

Classification of Responses	Type Totals	Percentage
Dominant II	2	5%
Mixed II III	2	5%
Dominant III	15	33%
Mixed III, IV	3	7%
Dominant IV	13	28%
Mixed IV, V	1	2%
Dominant V	6	13%
Mixed V, VI	-	0%
Dominant VI	3	7%
Totals	45	100%

Table 5 is an analysis of the population sample according to the categories presented by Percival (1970).

The analysis indicated that the majority of the S's functioned at the Conventional Level of moral reasoning (Stages 3 and 4). The

total percentage at this level was obtained by adding the mixed and dominant types: 75% of S's scored at this level. Two S's responded at the Preconventional Level and nine S's responded at the Postconventional Level.

Summary: The present sample's mean moral maturity score was 373.02. The mean variation score of 35.96 was considerably lower than any other score available for comparison. The higher stage S's tended to have a lower variation score than the lower stage S's, suggesting more stabilization in the higher stage group. The use of Percival's (1970) categories for classification of stage mixture indicated that 75% of the population sample functioned at the Conventional Level, with only 7% using both Stages 3 and 4. Two S's (5%) responded at the Preconventional Level and nine S's (20%) responded at the Postconventional Level.

Barron Complexity Scale:

The Barron Complexity Scale was administered to measure personality rigidity for each S. S's responded to a true/false dichotomy for 50 specific questions. Responses were scored according to the keyed responses for complexity (See Appendix B). The scores were then inspected and cut-off scores were arbitrarily determined. S's who received a score of 20 or less were categorized as being rigid and S's receiving a score greater than 20 were categorized as being flexible. Table 6 depicts the percentage of S's in each category.

Table 6

Classification of Young Adults
on the Barron Complexity Scale

Group	N	Percentage
High Rigidity	20	44.45%
Low Rigidity	25	55.55%

Relationship to Moral Development: According to Kohlberg (1963), the progressive movement toward basing moral judgments on concepts of justice, involves the increasing ability to react to others as someone like the self and to react to the self's behavior in the role of others. Barron (1963) suggests that preference for simplicity (rigidity) is related positively to 'inflexibility of thought and manner, stubbornness, and firmness'. Thus, the development of the above mentioned personality characteristics would seemingly impede progressive movement toward a more autonomous individual.

A correlation coefficient, in terms of raw scores, was calculated to determine whether there was a significant relationship between Kohlberg's Moral Dilemmas and Barron's Complexity Scale. The results indicated a significant correlation ($r = .548$, $\alpha = .001$). A summary of this relationship is presented in Table 7.

Table 7

Contingency Table Showing the Relationship
Between Level of Moral Judgment
and Degree of Personality Rigidity

Kohlberg Stages	High Rigidity	Low Rigidity	Total
Kohlberg 1, 2, 3	10	5	15
Kohlberg 4, 5, 6	7	17	24
Total	17	22	39

To further investigate whether levels of moral judgment and degree of personality rigidity are independent of each other, or associated, a chi-square with the Yates correction for small n (Ferguson, 1971) was calculated. For df = 1, a $X^2 = 3.86$ was significant at better than the .05 level of confidence. The data provide fairly conclusive evidence that the degree of personality rigidity differentiates between individuals on the basis of their attained level of moral reasoning. Thus, Hypothesis I was confirmed.

Luchins' Einstellung Test:

The Luchins' Water Jar (Einstellung) Test (Luchins, 1949) was administered to determine the level of problem-solving rigidity for each S.

Level of Problem-Solving Rigidity: After scoring the responses on the Einstellung Test, S's were grouped into four classifications according to the degree of problem-solving rigidity (Luchins, 1949).

Group I: S's who solved all critical problems and all four extinction tasks by direct methods (ie., who did not show any B-A-2C solutions or any failures of these problems).

Group II: S's who used the complex (B-A-2C) method in the first or second critical problem, or both, but who solved all subsequent problems by direct methods.

Group III: S's who used the complex (B-A-2C) method in the first three critical problems or in all four critical problems, but who solved all four extinction tasks.

Group IV: S's who used the complex (B-A-2C) method in all four critical problems and who failed to solve any of the four extinction tasks.

If failures to solve the critical problems are taken as indicative of problem-solving rigidity, then it may be said that the amount of rigidity consistently increases from Group I to Group IV, since the percentage of such solutions to the critical problems increases from group to group. Table 8 depicts the percentage of S's in each group.

Table 8

Percentage of S's in Each Classification of Problem-Solving Rigidity

Group	N	Percentage
Group I	6	15.5%
Group II	7	17.9%
Group III	9	23.0%
Group IV	17	43.6%
	39	100.0%

The analysis indicated that the majority of students functioned at the rigid end of the continuum, ie., Groups III and IV. The total percentage (66.6%) at this level was obtained by adding the two groups.

Relationship of Problem-Solving Rigidity to Level of Moral Judgment: If the more advanced stages of moral reasoning require the ability to problem-solve in conflict situations (Kohlberg, 1975), it would seemingly follow that the individual would have to possess a fairly flexible cognitive structure in order to analyze the possible alternatives. Thus, a comparison was made between the degree of problem-solving rigidity and the level of moral development. Low problem-solving rigidity (flexibility) was taken as application of the direct method to three of four critical problems. Table 9 presents a summary of the results.

Table 9

Relationship of Kohlberg's Moral Dilemmas to Problem-Solving Rigidity (in Percentages)

Degree of Rigidity	Kohlberg's Stages 1,2, 3	Kohlberg's Stages 4, 5, 6	Total %
Group I	0.0	15.5	15.5%
Group II	12.8	5.1	17.9%
Group III	5.1	17.9	23.0%
Group IV	30.8	12.8	43.6%
Total	48.7	51.3	100.0%

Comparison between the extremes (eg. Group I vs Group IV) indicated that those students who are functioning at higher levels of moral reasoning also have better abilities to change their mental set and hence, problem solve more efficiently. A correlation coefficient of .412 was found to be significant at the .05 level of confidence. To further investigate whether levels of moral judgment and problem-solving abilities are associated, or independent of each other, a chi square with the Yates' correction for small n was calculated. For df = 1, $X^2 = 4.75$ was significant at better than the .05 level of confidence. The data provide fairly good evidence that the ability to problem-solve is related to the attainment of higher levels of moral reasoning. Thus, Hypothesis II was confirmed.

Relationship of Problem-Solving Rigidity to Personality Rigidity: If rigidity-flexibility is a "general factor in personality organization and functioning" (Cowen and Thompson, 1951, p. 175) which permeates every sphere of life, it should follow that the degree of problem-solving rigidity displayed by an individual has a relationship to personality development. The inability to use past experiences in problem-solving situations, or to change one's mental set with the demands of the situation, is seemingly characteristic of intellectual functioning; that of rigidity-flexibility (Luchins, 1949). Thus, a comparison was made between the degree of problem-solving rigidity and the degree of personality rigidity. Table 10 presents a summary of the results.

Persistance in the use of the more complex solution in less than three of four critical problems was considered indicative of rigidity. Analysis revealed a correlation coefficient of .362, which those individuals with a low degree of personality rigidity and a low degree of problem-solving rigidity.

Table 10

Relationship of Problem-Solving Rigidity to Personality Rigidity (in Percentages)

Number of Criticals Correct	Personality Rigidity: Low Rigidity	Personality Rigidity: High Rigidity	Total Percentage
0 Criticals	2.57	23.07	25.64%
1 Critical	7.70	2.56	10.26%
2 Criticals	17.95	2.56	20.51%
3 Criticals	25.64	2.56	28.20%
4 Criticals	12.83	2.56	15.39%
Total	66.69	33.31	100.00%

To further investigate the relationship between the two measures of rigidity, a chi square, with the Yates' correction for small n, was calculated. For df = 1, a $X^2 = 5.58$ was significant at better than the .02 level of confidence. This provided further evidence that the degree of problem-solving rigidity displayed by an individual has a relationship to personality development. Thus, Hypotheses III was confirmed.

Additional Analysis:

Social Class: As previously discussed, the individual's moral and personality development may be shaped by his upbringing. Further, the rigid behavior acquired through various forms of parental control and displayed by the individual could be attributed to his personality

development and thereby would influence his moral development. It was previously suggested that the more democratic habits of child-rearing elicited by the higher socio-economic classes, produced more sensitivity to moral principles and hence less cognitive rigidity. Thus a comparison was made between social class, moral development and the two types of rigidity. A summary of the results is presented in Table 11.

Table 11

Analysis of the Correlation Coefficient Between Social Class and the Three Instruments

Instruments	r	df	P
Kohlberg's Moral Dilemmas	.035	37	.213(ns)
Barron's Complexity Scale	.204	37	1.270(ns)
Luchins' Einstellung Test	.210	37	1.300(ns)

The correlations were not sufficiently significant to suggest that socio-economic status was related to either the overall level of moral development attained or the degree of rigidity possessed. The data were analyzed by use of chi square to determine whether the extremes of each measure were related to socio-economic status. Table 12 presents the comparison.

Table 12

Relationship of Socio-Economic Status
to the Extremes of the Three Instruments

Instruments	X	df	Significance
Kohlberg's Moral Dilemmas	3.80	1	.10 (ns)
Barron's Complexity Scale	2.72	1	.10 (ns)
Luchins' Einstellung Test	2.96	1	.10 (ns)

The results indicated that all values fall at about the 10 percent level of confidence which does not justify acceptance of the hypothesis that level of moral development, degree of personality rigidity and degree of problem-solving rigidity may be contingent on one's socio-economic status. Thus, Hypothesis IV was not confirmed.

Sex: In his research on moral development, Kohlberg (1969) suggested that females achieve Stage 3 morality earlier and tend to remain in this stage longer than do males. However, there is no substantial evidence to support this claim. Thus an application of a t-test to the three instruments was undertaken to determine the existence of sex differences. Table 13 summarizes the results.

Table 13

Application of a t-test to Determine
Male/Female Differences on the Three Instruments

Instruments	Males $\bar{X}$	Males SD	Females $\bar{X}$	Females SD	df	P
Kohlberg's Moral Dilemmas	4.1	3.98	3.52	.379	37	.616(ns)
Barron's Complexity Scale	23.05	6.18	19.74	4.84	37	1.830(ns)
Luchins' Einstellung Test	1.05	1.43	1.26	1.58	37	.425(ns)

The results indicated that there was no significant sex difference in either the level of moral reasoning or the degree of cognitive rigidity.

Summary:

Correlation coefficients and chi square analysis were carried out in a direct test of four hypotheses. Results of the analyses are summarized as follows:

Hypotheses	Results
1. There will be a significant correlation between those individuals scoring high on the Barron Complexity Scale and Kohlberg's Stages 4, 5, 6.	Confirmed
2. There will be a significant correlation between those individuals who solve at least 3 of 4 critical tasks of the Luchins' Einstellung Test by direct methods and Kohlberg's Stages 4, 5, 6.	Confirmed
3. There will be a significant correlation between those individuals scoring high on the BCS and those individuals who solve at least 3 of 4 critical tasks of the ET by direct methods.	Confirmed
4. There will be a significant correlation between personality rigidity, problem-solving rigidity and social class.	Not Confirmed

Additional results include:

1. Moral Maturity scores ranged from 241-593, with the mean score of 372.02.

2. The majority of young adults at the University of Alberta function at the Conventional Level, Stages 3 and 4, of moral development.

3. A significantly greater proportion of the sample reflected a high degree of problem-solving rigidity.

4. A significantly greater proportion of the sample reflected a low degree of personality rigidity.

5. There were no significant sex differences in the level of moral reasoning or degrees of either personality or problem-solving rigidity.

The following chapter includes an interpretation of the findings and a discussion of the conclusions and implications.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

The relationship of moral development to both personality rigidity and problem-solving rigidity was investigated in this study. To accomplish the intention of this study, young adults enrolled in an Introductory Educational Psychology course at the University of Alberta were administered the Barron Complexity Scale, which measures personality rigidity; the Einstellung Water Jar Test, which measures problem-solving rigidity; and, Form A of Kohlberg's Moral Dilemmas, to determine the level of moral reasoning.

The first research question focused on the cognitive levels attained in the area of problem-solving in moral situations. Analysis of the protocols revealed several significant trends. Firstly, the computation of moral maturity scores indicated that the majority of young adults functioned at Level II (Conventional), Stage 3 and 4. Stage 3 is described (Kohlberg, 1968) as the Good-boy, Good-girl orientation where there is much conformity to stereotypical images of what is majority behavior. At Stage 4 one earns respect by performing dutifully.

Additional analysis, by Percival's (1970) classification of mixed scores, further revealed that the majority of students functioned at the Conventional Level. There were however, two S's who responded at Level I (Preconventional) and nine S's who responded at Level III (Postconventional). According to Kohlberg (1968),

the Postconventional Level is characterized by a major thrust toward more autonomous principles which have validity and application apart from authority of the groups or persons who hold them apart from the individual's identification with these persons or groups.

As the transition from Preconventional to Conventional morality generally occurs during the late elementary school years, it is curious to find two S's of this sample who are functioning at the Preconventional Level. Kohlberg and Kramer (1969) explained such a finding as a temporary regression caused by the pressures of college life. In their longitudinal study of the moral judgments of individuals between ten and thirty years of age, Kohlberg and Kramer (1969) claimed that a small percentage of their S's who had been assessed primarily at Stage 4 during late high school, showed a great deal of Stage 2 thinking during their college years. By their midtwenties however, these S's were functioning primarily at Stage 5. Although this regression to Stage 2 reasoning is a return to a lower structural stage, it may also be considered a 'functional advance' in that the individual moves from a questioning of previous commitment and standards, before these standards can be stabilized as 'one's own identity'.

Contrary to this interpretation however, is Turiel's opinion that the type of thinking characterized as Stage 2 only resembles Stage 2 in content but actually reflects a more advanced structure. Analysis of the Stage 2 responses in the Kohlberg and Kramer (1969)

study revealed that the S's did not view the individual's reaction to society in instrumental terms (Stage 2), but rather, the "relativism expressed by these S's reflected a differentiation of individual and societal systems, as well as changing concepts of each of these systems" (Turiel, 1974, p. 20). The responses were similar to Stage 2 thought only in the content considered and not in the structure of the judgments made. Further, Turiel noted inconsistencies in the responses which he felt indicative of both an incomplete understanding of Stage 5 conceptions and rejection of Stage 4 concepts. Thus, according to Turiel (1974), the Stage 2 reasoning exhibited by these S's may be a reflection of the period of transition from Stage 4 to Stage 5 moral reasoning.

Since the level of moral reasoning previously held by the two individuals in this particular study is unknown, it may only be suggested that: S's are in a period of regression to Stage 2 instrumental egoism while undergoing a new awareness of the relativity of value and choice, or; S's are in a period of transition from Stage 4 to Stage 5 reasoning, or; S's have not progressed beyond Stage 2 reasoning.

A second important finding was that the variation scores of this sample were considerably smaller than those reported in the study by Kramer (1969). The small variation score would seem to indicate that there is a tendency for this sample to stabilize at Level II, which is characterized by a need for group approval, and respect for authority.

Another question raised in this study was whether these young adults reflected a characteristic level of personality rigidity. Data analysis revealed that a significantly greater proportion of the sample reflected a low degree of personality rigidity. Barron (1963) equates this low degree of personality rigidity with preference for complexity, and hence, originality. The disposition toward originality may be seen as a highly organized mode of responding to experience, including other persons, society and oneself. As this type of rigidity is somewhat cognitive in nature and deals with the realm of ideas, it is seemingly related to social interests and how much the person is likely to conform to society. Thus, Barron (1955) suggested that this preference for complexity may, although it does not always, result in a rejection of conventional morality. Analysis of this sample suggested that the degree of personality rigidity does differentiate between individuals on the basis of their attained level of moral reasoning. A significant proportion of those individuals displaying low personality rigidity characteristics also attained higher levels of moral reasoning. Thus, the degree of personality rigidity appears to play an important part in the attainment of the higher stages of moral reasoning.

Since the more advanced stages of moral reasoning require the ability to problem-solve in conflict situations (Kohlberg, 1975), it would seemingly follow that the individual would have to possess a fairly flexible cognitive structure which is characteristic of a

generalized factor of intellectual functioning. Thus, the present study also attempted to evaluate the presence of a generalized factor of intellectual functioning, and its relationship to moral development. Analysis of the data revealed several significant trends. Firstly, comparison of the two types of rigidity indicated that the majority of students who were classified as low in problem-solving rigidity were also low in personality rigidity. These results tend to confirm the postulation that rigidity, as herein defined, is a general factor in personality organization and functioning. Further, if problem-solving rigidity "is a pervasive and generalized response tendency with observable correlates among other phases of the individual's personality structure (Luchins, 1949), it follows that knowledge of an individual's position on a scale of Einstellung rigidity allows broad deductions about attitudes and behaviors in other situations.

Additional analysis indicated that the ability to problem-solve was directly related to the attainment of higher levels of moral reasoning. Those students who are functioning at higher levels of moral reasoning (Stages 4, 5, 6) also have developed better abilities to shift their mental set and hence problem-solve more efficiently.

The question of whether there was a significant difference in moral development, personality rigidity and problem-solving rigidity as related to social class was raised. The application of a correlation coefficient and chi square to the data revealed that there were no significant differences between low to low-middle class and high-middle to high class with respect to the three test variables.

These findings are not in agreement with Kohlberg's (1976b) findings that the individuals from higher socio-economic levels tend to be more ethically advanced than individuals from lower levels. However, the results do agree with Tracy's (1971) findings that lower class individuals tend to exhibit moral maturity scores as high as their upper class counterparts. Since moral development is dependent on the availability of social experiences (Kohlberg, 1966) and is seemingly associated with a generalized factor of intellectual functioning, as previously discussed, it is possible that since this sample was drawn from a university population where one's cognitive structures are continually stimulated that the sample was not truly differentiating the socio-economic classes. This suggested that factors additional to socio-economic classes are necessary for progression to the more autonomous individual. Such factors may include the situation and its pressures and/or the individual's particular motives, actions, emotions.

The last question presented in this study focused on whether there were any overall significant sex differences in moral development, personality rigidity and problem-solving rigidity. The application of a t-test to the data revealed no significant differences between males and females on all three instruments. These findings support the present author's contention that the societal involvement of today's women, which increases the availability of their role-taking opportunities, enhances movement from their postulated Stage 3 (Kohlberg, 1967) orientation to higher levels of moral reasoning.

Summary of Conclusions:

1. There is some evidence that personality rigidity as measured by the Barron Complexity Scale, and problem-solving rigidity, as measured by the Luchins Einstellung Test, have a positive relationship to moral development.

2. There is some evidence that both personality rigidity and problem-solving rigidity measure one 'generalized' rigidity factor.

3. Flexibility of cognitive structures, as measured by high scores on both the Barron Complexity Scale and Luchins Einstellung Test, have a positive relationship to the higher levels of moral reasoning, irrespective of sex or socio-economic status.

Implications for Further Study:

In this study, there was some evidence that cognitive flexibility (as opposed to rigidity) is positively related to acquired level of moral reasoning, at least among university students. However, university students are a select group of the population as a whole. Therefore, in an extended range by inclusion of both white and blue-collar workers, we should expect to find more significant differences thus giving the confirmed hypothes greater validity for the whole population.

As well, it would be of interest to compare this study with other areas. Does an ethnic or religious population reflect the same levels of moral reasoning as seen in this sample? Are their attitudes and beliefs more rigidly engrained? And, if so, does this effect their progress to the more autonomous person? The same questions may also be applied to the delinquent youths of our society, as previous research (Kohlberg, 1958; Fodor, 1971; Hudgins, 1972) suggested that the level of moral development of delinquent boys was substantially lower than non-delinquent boys.

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APPENDIX A

INFORMATION SHEET

1. Subject No. -

2. Sex -

3. Age -

4. Parental Occupations: Mother -

Father -

DECISION STORIES AND QUESTIONS

On the following pages you will find several stories each of which is followed by some questions. The purpose of these stories and questions is to get at your opinions and ideas. Please write down all the ideas or feelings they bring to mind rather than giving "Yes" or "No" answers. Just writing "Yes" or "No" is definitely not an adequate answer. You should always give your reasons for your answer.

You are to write your answers in the spaces provided following each question. If you need more spaces you may write on the back of the page, but if you do, be sure to specify which question you are answering. You should be able to answer most of the questions in the space that is provided.

Remember that this is not a test in the usual sense. There are no right or wrong answers. There can only be different ideas and opinions about these stories. So, do not spend a long time thinking about how to answer any one question, but simply write down what your opinions and ideas are about it.

Dilemma III:

In Europe, a woman was near death from a special kind of cancer. There was one drug that the doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost him to make. He paid $200 for the radium and charged $2,000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money but he could only get together about $1,000, which is half of what it cost. He told the druggist that his wife was dying, and asked him to sell it cheaper or let him pay later. But the druggist said, "No, I discovered the drug and I'm going to make money from it". So Heinz gets desperate and considers breaking into the man's store to steal the drug for his wife.

1. Should Heinz steal the drug? Why or why not?

2. If Heinz doesn't love his wife, should he steal the drug for her? Why or why not?

3. Suppose the person dying is not his wife, but a stranger. Should Heinz steal the drug for the stranger? Why or why not?

4. (If you favor stealing the drug for a friend:) Suppose it's a pet animal he loves. Should Heinz steal to save the pet animal? Why or why not?

5. Why should people do everything they can to save another's life, anyway?

6. It is against the law for Heinz to steal. Does that make it morally wrong? Why or why not?

7. Why should people generally do everything they can to avoid breaking the law?

7a. How does this relate to Heinz's case?

Dilemma III':

Heinz did break into the store. He stole the drug and gave it to his wife. In the newspapers the next day, there was an account of the robbery. Mr. Brown, a police officer who knew Heinz, read the account. He remembered seeing Heinz running away from the store and realized it was Heinz who stole the drug. Mr. Brown wonders whether he should report that Heinz was the robber.

1. Should Officer Brown report Heinz for stealing? Why or why not?

2. Officer Brown finds and arrests Heinz. Heinz is brought to court, and a jury is selected. The jury's job is to find whether a person is innocent or guilty of committing a crime. It is up to the judge to determine the sentence. Should the judge find Heinz some sentence, or should he suspend the sentence and let Heinz go free? Why?

3. Thinking in terms of society, why should people who break the law be punished?

10. Most people believe that thinking and reasoning in science can lead to a correct answer. Is the same thing true in moral decisions, or are they different?

Dilemma I:

Joe is a fourteen year old boy who wanted to go to camp very much. His father promised him he could go if he saved up the money for it himself. So Joe worked hard at his paper route and saved up the $40 it cost to go to camp and a little more besides. But just before camp was going to start, his father changed his mind. Some of his friends decided to go on a special fishing trip, and Joe's father was short of the money it would cost. So he told Joe to give him the money he had saved from the paper route. Joe didn't want to give up going to camp, so he thinks of refusing to give his father the money.

1. Should Joe refuse to give his father the money? Why or why not?

2. In what way is the fact that Joe earned the money himself something very important for the father to consider?

3. The father promised Joe he could go to camp if he earned the money. Is that promise something very important for the father or Joe to consider? Why or why not?

4. Why in general should a promise be kept?

5. Is it important to keep a promise to someone you don't know well and probably won't see again? Why or why not?

6. What do you think is the most important thing for a good son to be concerned about in his relationship to his father in this or other situations?

6a. Why is that important?

7. What do you think is the most important thing for a good father to be concerned about in his relationship to his son in this or other situations?

7a. Why is that important?

APPENDIX B

BARRONS COMPLEXITY SCALE (1963) Revised

Please answer ALL questions on the separate answer sheet as being either true or false for you.
Please do not write in this test booklet.

		Keyed Response for Complexity
1.	I believe in a life hereafter.	False
2.	I get mad easily and then get over it soon.	True
3.	I believe there is a God.	False
4.	In religious matters, I believe I would have to be called an agnostic.	True
5.	I frequently undertake more than I can accomplish.	True
6.	The unfinished and the imperfect often have greater appeal than the completed and polished.	True
7.	I could cut my moorings - quit my home, my parents, and my friends - without suffering great regrets.	True
8.	Politically I am probably something of a radical.	True
9.	I think I take primarily an esthetic view of experience.	True
10.	I remember that my first day at school was very painful.	True
11.	I would enjoy the experience of living and working in a foreign country.	True
12.	I don't expect to have more than two children.	True
13.	Many of my friends would probably be considered unconventional by other people.	True

		Keyed Response for Complexity
14.	The way things look now I guess I won't amount to much in this world.	True
15.	I enjoy discarding the old and accepting the new.	True
16.	I doubt that anyone will ever be able to predict my every move.	True
17.	Some of my friends think that my ideas are impractical, if not a bit wild.	True
18.	When someone talks against certain groups or nationalities, I always speak up against such talk, even though it makes me unpopular.	True
19.	I enjoy the company of strong willed people.	True
20.	As a child my home life was not as happy as that of most others.	True
21.	I have always had goals and ambitions that were beyond anything practical or that seemed capable of being realized.	True
22.	I often get the feeling that I am not really part of the group I associate with and that I could separate from it with little discomfort or hardship.	True
23.	People would be happier if sex experience were taken for granted in both men and women.	True
24.	I guess my friends tend to think of me as a cold and unsentimental sort of person.	True
25.	I don't like modern art.	False
26.	Disobedience to the government is never justified.	False
27.	Perfect balance is the essence of all good composition.	False

		Keyed Response for Complexity
28.	It would be better if our teachers would give us a clearer idea of what they consider important.	False
29.	Straightforward reasoning appeals to me more than metaphors and the search for analogies.	False
30.	It is a pretty callous person who does not feel love and gratitude toward his parents.	False
31.	Things seem simpler as you learn more about them.	False
32.	Every wage earner should be required to save a certain part of his income each month so that he will be able to support himself and his family in later years.	False
33.	Kindness and generosity are the most important qualities for a wife to have.	False
34.	When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things.	False
35.	It is the duty of a citizen to support his country, right or wrong.	False
36.	Barring emergencies, I have a pretty good idea what I will be doing for the next ten years.	False
37.	Army life is a good influence on most young men.	False
38.	I prefer team games to games in which one individual competes against another.	False
39.	An invention which takes jobs away from people should be suppressed until new work can be found for them.	False

		Keyed Response for Complexity
40.	A person who doesn't vote is not a good citizen.	False
41.	I become irritated when I see someone spit on the sidewalk.	False
42.	I often wish people would be more definite about things.	False
43.	It is always a good thing to be frank.	False
44.	When I get bored I like to stir up some excitement.	True
45.	Sometimes I have the same dream over and over.	False
46.	I much prefer symmetry to assymmetry.	False
47.	I would rather be a steady and dependable worker than a brilliant but unstable one.	
48.	I would be willing to give money myself in order to right a wrong, even though I was not mixed up in it in the first place.	True
49.	It is annoying to listen to a lecturer who cannot seem to make up his mind as to what he really believes.	False

APPENDIX C

LUCHIN'S EINSTELLUNG TEST

On the following pages you will find several arithmetical problems. Your task is to answer these problems by the most direct method possible.

Please write down all your workings rather than just giving the answer. Just writing the answer is not adequate. You should always give the method by which you derived your answers.

You are to write your answers in the spaces provided following each question. If you need more space, you may write on the back of the page. You should be able to answer most of the questions in the space that is provided.

Problem 1 is for illustrative purposes only. Problem 2 you will attempt on your own and then the Experimenter will give the solution verbally plus write it on the blackboard. No further help is given.

The time limit on each problem is 2 1/2 minutes. Do not turn the page to the next problem until instructed to do so. Please attempt all problems.

STOP HERE

SAMPLE PROBLEM

1. Given: an empty 29 quart jar, an empty 3 quart jar; measure 20 quarts of water.

   Ans: 29 - 3 (3) 20 quarts

STOP HERE

2. Given: an empty 21 quart jar, an empty 127 quart jar, and an empty 3 quart jar; measure 100 quarts of water.

STOP HERE

3. Given an empty 14 quart jar, an empty 163 quart jar, and an empty 25 quart jar, measure 99 quarts of water.

STOP HERE

4. Given: an empty 18 quart jar, an empty 43 quart jar, and an empty 10 quart jar, measure 5 quarts of water.

STOP HERE

5. Given: an empty 9 quart jar, an empty 42 quart jar, and an empty 6 quart jar, measure 5 quarts of water.

STOP HERE

6. Given: an empty 20 quart jar, an empty 59 quart jar, and an empty 4 quart jar, measure 31 quarts of water.

STOP HERE

7. Given: an empty 23 quart jar, an empty 49 quart jar, and an empty 3 quart jar, measure 20 quarts of water.

STOP HERE

8. Given: an empty 15 quart jar, an empty 39 quart jar, and an empty 3 quart jar, measure 18 quarts of water.

STOP HERE

9. Given: an empty 34 quart jar, an empty 85 quart jar, and an empty 17 quart jar, measure 17 quarts of water.

STOP HERE

10. Given: an empty 26 quart jar, an empty 65 quart jar, and an empty 13 quart jar; measure 25 quarts of water.

STOP HERE

- - -

11. Given: an empty 28 quart jar, an empty 76 quart jar, and an empty 3 quart jar; measure 25 quarts of water.

STOP HERE

- - -

12. Given: an empty 14 quart jar, an empty 21 quart jar, and an empty 4 quart jar; measure 10 quarts of water.

STOP HERE

13. Given: an empty 15 quart jar, an empty 32 quart jar, and an empty 6 quart jar; measure 9 quarts of water.

STOP HERE

14. Given: an empty 35 quart jar, an empty 69 quart jar, and an empty 5 quart jar; measure 30 quarts of water.

STOP HERE